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Change Number M-13-93-03	Federal Facility Agreement and Consent Order Change Control Form Do not use blue ink. Type or print using black ink.	Date Jan. 25, 1994
Originator J. K. Erickson		Phone 376-3603
Class of Change <input type="checkbox"/> I - Signatories <input checked="" type="checkbox"/> II - Project Manager <input type="checkbox"/> III - Unit Manager		
Change Title 200 AREA GROUNDWATER OPERABLE UNITS SCOPE REVISION		
Description/Justification of Change See attached		
Impact of Change Revise Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) and add new milestones as follows:  1) Begin pilot-scale pump and treat operations for 200-ZP-1 30 days after the Interim Record of Decision is issued but no sooner than February 28, 1994 (M-13-04A*).  2) Begin pilot-scale pump and treat operations for 200-UP-1 30 days after the Limited Field Investigation Workplan is approved but no sooner than March 31, 1994 (M-13-02A*).  3) Begin pilot-scale pump and treat operations for 200-BP-5 30 days after the Treatability Test Plan is approved but no sooner than August 31, 1994 (M-13-06A*).  * New Tri-Party Agreement Milestones.		
Affected Documents Tri-Party Agreement Action Plan, Appendix D, work schedules.		
Approvals <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved  This change form approved by Amendment Four to the Hanford Federal Facility Agreement and Consent Order executed by the signatories on January 25, 1994.		<div style="border: 2px solid black; padding: 10px; text-align: center;"> <h1 style="margin: 0;">RECEIVED</h1> <p style="margin: 5px 0;">MAR 17 2003</p> <p style="margin: 0;">EDMC</p> </div>
John Wagoner _____ January 25, 1994 DOE Date		
Gerald Emison _____ January 25, 1994 EPA Date		
Mary Riveland _____ January 25, 1994 Ecology Date		

## ACCELERATED REMEDIATION OF GROUNDWATER IN THE 200 AREA

### ACTION:

Begin groundwater cleanup through the accelerated start of pilot-scale pump and treat projects for the 200 Area groundwater. Contaminants to be addressed in the 200 West Area are carbon tetrachloride, chloroform, TCE, uranium, technetium, nitrate and in the 200 East Area technetium, plutonium, strontium, cesium, and cobalt. The treatment, if determined effective, will continue to operate until the record of decision (ROD). The treatment systems (wells, pumps, surface equipment and disposal), will be modified/expanded as needed during the treatability and remediation activities to improve the efficiency of the cleanup activities. As part of the optimization other treatment systems and disposal sites (e.g. C-018 or W-049) to be constructed in the future at the Hanford Site will also be evaluated and may be utilized if the three parties agree it is appropriate. In conjunction with the treatment and disposal alternatives, the use of hydraulic control to retard movement of plumes will be evaluated.

### BACKGROUND:

The 200 East and 200 West Groundwater Aggregate Area Management Study Reports (AAMSR) were issued in fiscal year (FY) 92 and FY-93 summarizing and interpreting existing data from the groundwater in the 200 Area. Using the Hanford Site Past Practice Strategy as a basis for evaluating future actions, it was recommended to separate groundwater from source operable units (OU) into separate and distinct "groundwater only" OUs. This has been formally done via Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) change request in the 200 West Area by creating the 200-UP-1 and 200-ZP-1 Groundwater OUs. Similar changes have been discussed among the three parties for the 200 East Area that would result in creation of two "groundwater only" OUs presently identified as 200-BP-5 and 200-PO-1. Formal change packages for these two OUs, are currently in process per Change Request C-93-06. Tri-Party Agreement milestones presently exist for issuance of Limited Field Investigation (LFI) work plans for the 200-UP-1, (M-13-02 issued April 30, 1993), 200-ZP-1 (M-13-04 due August 31, 1993) and 200-BP-5, (M-13-06 due December 31, 1993) OUs. The scope of work detailed in the LFI work plans has been discussed at length among the three parties with the primary issues being the type of treatability testing to be performed, the contaminants to be addressed by the treatability tests, the amount of characterization required to support remediation objectives, and the process/deliverables (and subject interim milestones) necessary to obtain a ROD.

200-ZP-1

### ACTION:

Begin groundwater cleanup through the accelerated start of pilot-scale pump and treat projects for the 200 Area groundwater. Contaminants to be addressed in the 200-ZP-1 OU are carbon tetrachloride, chloroform, and TCE. The treatment system (wells, pumps, surface equipment and disposal), will be continuously modified/expanded during the treatability and remediation phases to optimize the cleanup activities.

#### SCOPE:

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The 200-ZP-1 LFI Workplan Milestone will be changed to 200-ZP-1 Interim Remedial Measures (IRM) Proposed Plan (see Tri-Party Agreement Change Request M-13-93-02). The IRM Proposed Plan will be based on the recommendations from the 200 West Groundwater AAMSR, will specify the remediation alternative(s) which will be tested at the field-scale (e.g. pilot-scale) under a treatability test program, and will specify other characterization or engineering activities necessary to support the interim ROD (IROD). The plan will be concise, provide an overall schedule for the above activities, and will outline the remedial strategy. The IRM Proposed Plan will focus on the Expedited Response Action (ERA) and IRM volatile organic contaminants (carbon tetrachloride, TCE, and chloroform) identified in the 200 West Groundwater AAMSR. It is understood that the IROD will be written with sufficient flexibility to allow for the refinement and optimization of the treatment schemes. In addition, the IROD will include decision points and criteria sufficient to assess the need for continuation/expansion/cessation of the treatment schemes. The proposed CCL<sub>2</sub> Groundwater ERA will be dropped as a separate activity and will be integrated within the IRM Proposed Plan. Upon agreement by the three parties, bench scale testing will commence immediately to refine a treatment train for the primary groundwater contaminants (carbon tetrachloride, chloroform, and TCE). The pilot-scale test will use existing wells. The same configuration (without additional modification) will also be assessed for its effectiveness on secondary contaminants known to exist in the groundwater. Treated effluent will be returned to the soil column or to the aquifer.

#### 200-UP-1

#### ACTION:

Begin groundwater cleanup through the accelerated start of pilot- and bench-scale pump and treat projects for the 200 Area groundwater. Contaminants to be addressed in the 200-UP-1 OU are uranium, technetium and nitrate. The treatment system (wells, pumps, surface equipment and disposal), will be continuously modified/expanded during the treatability and remediation phases to optimize the cleanup activities.

#### SCOPE:

The 200-UP-1 LFI Workplan will be revised during the regulatory/public comment disposition cycle to include a defined treatability testing program. The workplan will detail a schedule for accomplishing treatability testing activities. The treatability test(s) will include pilot-scale testing for uranium and technetium and lab/bench-scale testing for nitrate contaminated plumes beneath U-Plant as identified in the 200 West Groundwater AAMSR. Following the completion of the treatability tests, an IRM Proposed Plan would be prepared to support an IROD. The IROD will include decision points and criteria sufficient to assess the need for continuation/expansion/cessation of the treatment schemes. Upon agreement by the three parties, bench scale testing will commence immediately to refine the treatment train for the primary groundwater contaminants (e.g. determining the optimum and most cost effective ion exchange resin or activated carbon for uranium and technetium removal). The pilot-scale test will use existing wells. The same configuration (without additional modification) will also be assessed as to its effectiveness on secondary contaminants known to exist in the groundwater. Treated effluent will be returned to the soil column or to the aquifer.

200-BP-5

ACTION:

Begin groundwater cleanup through the accelerated start of pilot-scale pump and treat projects for the 200 Area groundwater. Contaminants to be addressed in the 200-BP-5 OU are plutonium, strontium, cesium, technetium and cobalt. The treatment system (wells, pumps, surface equipment and disposal), will be continuously modified/expanded during the treatability and remediation phases to optimize the cleanup activities.

SCOPE:

9101-01-1916  
The 200-BP-5 LFI Workplan Milestone will be changed to a 200-BP-5 Treatability Test Plan (TTP) (see Tri-Party Agreement Change Request M-13-93-02). This plan will contain a detailed evaluation and screening of a limited range of available technologies/alternatives and recommend treatability test(s) be performed for the most viable technology(ies). The plan will detail a schedule for implementing these tests which are expected to be field scale efforts. This plan will focus on the IRM and ERA contaminants identified in the 200 East Groundwater AAMSR (both from the BP-5 reverse well and those associated with the 200-BP-1 groundwater plume). The AAMSR recommended SR-90 Groundwater ERA in the 200-BP-5 OU will be integrated into the TTP. Following completion of the activities specified in the TTP, an IRM Proposed Plan will be prepared for use in preparation of the IROD. It is understood that the IROD will be written with sufficient flexibility to allow for the refinement and optimization of the treatment schemes. The IROD will include decision points and criteria sufficient to assess the need for continuation/expansion/cessation of the treatment schemes. The 216-B-5 reverse well and the 699-50-53A wells will be utilized to implement pilot-scale testing of techniques for removal of the above stated primary contaminants from the groundwater. The pilot-scale test will use existing limited well field capacity. The same configuration (without additional modification) will also be assessed as to its effectiveness on secondary contaminants known to exist in the groundwater. The ability to treat nitrate groundwater contamination will be evaluated as part of the 100 Area Treatability Testing Program and may be incorporated into the 200-BP-5 IRM Proposed Plan, if deemed necessary. Treated effluent will be returned to the soil column or to the aquifer.

MILESTONES:

- Begin pilot-scale pump and treat operations for 200-ZP-1 30 days after the IROD is issued but no sooner than February 28, 1994 (M-13-04A).
- Begin pilot-scale pump and treat operations and lab/bench-scale studies for 200-UP-1 30 days after the LFI Workplan is approved but no sooner than March 31, 1994 (M-13-02A).
- Begin pilot-scale pump and treat operations for 200-BP-5 30 days after the Treatability Test Plan is approved but no sooner than August 31, 1994 (M-13-06A).

The above Milestones are predicated on the following:


- Bench scale testing confirms treatment assumptions.
- The groundwater in the southern portion of the 200 East Area (200-PO-1) has low priority contaminants.
- Treated effluent containing contaminants above State water quality standards can be returned to the soil column or to the aquifer.
- Hazardous, radioactive and/or mixed waste (e.g. resins) will be stored and/or disposed of on-site at locations as agreed to by the three parties.
- Additional details and clarifications will be developed by the responsible unit managers documented on a Tri-Party Agreement, Unit Manager Agreement Forms.

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IT IS SO AGREED:

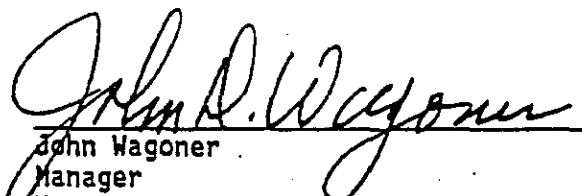
Each undersigned representative of a Party certifies that he or she is fully authorized to enter into this Agreement and Action Plan and to legally bind such Party to this Agreement and Action Plan. These change requests and amendments shall be effective upon the date on which this amendment agreement is signed by the Parties. Except as amended herein, the existing provisions of the Agreement shall remain in full force and effect.

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY:

  
Gerald Emison  
Acting Regional Administrator  
Region 10  
U.S. Environmental Protection Agency


1-25-94  
Date

FOR THE UNITED STATES DEPARTMENT OF ENERGY:

  
John Wagoner  
Manager  
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1/25/94  
Date

FOR THE WASHINGTON STATE DEPARTMENT OF ECOLOGY:

  
Mary Riveland  
Director  
State of Washington  
Department of Ecology

1/25/94  
Date

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